

CLAIMS:

1. An organic electroluminescence device comprising:
a semiconductor substrate, at least part of the
5 semiconductor substrate forming a Peltier element including
a heat absorbing portion and a heat radiating portion; and
an organic electroluminescence element arranged on or
above the semiconductor substrate, wherein the organic
electroluminescence element is arranged so that heat
10 resistance between the organic electroluminescence element
and the heat absorbing portion is less than heat resistance
between the organic electroluminescence element and the heat
radiating portion, and light emitted from the organic
electroluminescence element exits from a side facing away
15 from the semiconductor substrate.

2. The organic electroluminescence device according
to claim 1, wherein the semiconductor substrate entirely
forms the Peltier element with the heat absorbing portion
20 formed at one side of the Peltier element, and the organic
electroluminescence element is arranged on the semiconductor
substrate at the same side as the heat absorbing portion.

3. The organic electroluminescence device according
25 to claim 1, wherein the Peltier element includes a heat
absorbing electrode formed on the heat absorbing portion and
a heat radiating electrode formed on the heat radiating
portion, and the organic electroluminescence element
includes an electrode shared with the heat absorbing
30 electrode or electrically connected to the heat absorbing
electrode.

4. The organic electroluminescence device according
to claim 3, wherein the organic electroluminescence element
35 includes an organic electroluminescence layer and two

electrodes sandwiching the organic electroluminescence layer, with one of the two electrodes being shared with the heat absorbing electrode.

5 5. The organic electroluminescence device according to claim 3, wherein the organic electroluminescence element includes an organic electroluminescence layer and two electrodes sandwiching the organic electroluminescence layer, with one of the two electrodes being arranged on the
10 heat absorbing electrode.

 6. The organic electroluminescence device according to claim 3, wherein the heat absorbing electrode and the electrode of the organic electroluminescence element are
15 both supplied with voltage from a common power source.

 7. The organic electroluminescence device according to claim 1, wherein the Peltier element includes:
 two insulators having high thermal conductivity;
20 a p-type semiconductor and an n-type semiconductor arranged thermally in parallel to each other between the two insulators; and
 an electrode electrically connecting the two semiconductors in series.

25 8. The organic electroluminescence device according to claim 1, wherein the organic electroluminescence element includes:

 an organic electroluminescence layer; and
30 a cathode and an anode sandwiching the organic electroluminescence element, with voltage being applied between the cathode and the anode to emit light from the entire organic electroluminescence layer.

35 9. The organic electroluminescence device according

to claim 1, further comprising a plurality of organic electroluminescence elements, wherein said organic electroluminescence element is one of the plurality of organic electroluminescence elements, with the organic electroluminescence elements being configured so that each organic electroluminescence element emits light independently from the other organic electroluminescence elements.

10 10. A liquid crystal display comprising:
the organic electroluminescence device according to claim 1; and
a liquid crystal panel, wherein the organic electroluminescence device functions as a backlight for the
15 liquid crystal panel.

11. An organic electroluminescence device comprising:
a substrate including a semiconductor region;
a Peltier element formed in at least part of the
20 semiconductor region, the Peltier element including a heat absorbing electrode and a heat radiating electrode; and
an organic electroluminescence element arranged on or above the heat absorbing electrode, wherein light emitted from the organic electroluminescence element exists from a
25 side facing away from the substrate.

12. The organic electroluminescence device according to claim 11, wherein the organic electroluminescence element is arranged on the heat absorbing electrode directly or on
30 an insulating layer formed on the heat absorbing electrode, the insulating layer having high thermal conductivity.

13. The organic electroluminescence device according to claim 12, wherein the thermal conductivity of the
35 insulating layer is greater than that of the substrate.

14. The organic electroluminescence device according to claim 11, wherein the substrate is transparent and insulative.

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15. The organic electroluminescence device according to claim 11, wherein the substrate is made of metal.

16. The organic electroluminescence device according to claim 11, further comprising a plurality of organic electroluminescence elements, wherein said organic electroluminescence element is one of the plurality of organic electroluminescence elements, with the organic electroluminescence elements being configured so that each organic electroluminescence element emits light independently from the other organic electroluminescence elements.

17. A liquid crystal display comprising:
the organic electroluminescence device according to claim 11; and
a liquid crystal panel, wherein the organic electroluminescence device functions as a backlight for the liquid crystal panel.

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18. An organic electroluminescence device comprising:
a substrate including a semiconductor region:
a Peltier element formed in at least part of the semiconductor region, the Peltier element including a heat absorbing portion and a heat radiating portion; and
an organic electroluminescence element arranged on or above the substrate, wherein the organic electroluminescence element is arranged so that heat resistance between the organic electroluminescence element and the heat absorbing portion is less than heat resistance between the organic

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electroluminescence element and the heat radiating portion,
and light emitted from the organic electroluminescence
element exits from the substrate.

5 19. The organic electroluminescence device according
to claim 18, wherein the substrate is transparent and
insulative.

10 20. The organic electroluminescence device according
to claim 18, further comprising a plurality of organic
electroluminescence elements, wherein said organic
electroluminescence element is one of the plurality of
organic electroluminescence elements, the organic
electroluminescence elements being configured so that each
15 organic electroluminescence element emits light
independently from the other organic electroluminescence
elements.

20 21. A liquid crystal display comprising:
the organic electroluminescence device according to
claim 18; and
a liquid crystal panel, wherein the organic
electroluminescence device functions as a backlight for the
liquid crystal panel.

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